

WE CLAIM:

1. A method for enhancing CFTR channel activity in an epithelial cell expressing a mutant CFTR comprising transducing, into said cell, a CFTR polypeptide capable of binding to a molecular chaperone.
2. The method of claim 1 wherein the mutant CFTR comprises a deletion of amino acid residue 508.
3. The method of claim 1 wherein the molecular chaperone is the Hdj2 protein.
4. The method of claim 1 wherein the molecular chaperone is the Hsc/Hsp 70 protein.
5. The method of claim 1 wherein the CFTR polypeptide further comprises a internalizing peptide.
6. The method of claim one wherein the CFTR polypeptide further comprises a secretion leader sequence.
7. The method of claim 5 wherein the internalizing peptide is selected from the group consisting of SEQ ID NOS:1-20.
8. The method of claim 7 wherein the internalizing peptide is SEQ ID NO:2.

9. A method for enhancing CFTR channel activity in an epithelial cell expressing a mutant CFTR comprising recombinant expression, in said cell, of a CFTR polypeptide capable of binding to a molecular chaperone.

10. The method of claim 9 wherein the mutant CFTR comprises a deletion of amino acid residue 508.

11. The method of claim 9 wherein the molecular chaperone is the Hdj2 protein.

12. The method of claim 9 wherein the molecular chaperone is the Hsc/Hsp 70 protein.

13. The method of claim 9 wherein the CFTR polypeptide further comprises a internalizing peptide.

14. The method of claim 9 wherein the CFTR polypeptide further comprises a secretion leader sequence.

15. The method of claim 13 wherein the internalizing peptide is selected from the group consisting of SEQ ID NOS:1-20.

16. The method of claim 13 wherein the internalizing peptide is SEQ ID NO:2.

17. A CFTR polypeptide comprising amino acid sequences capable of binding to a molecular chaperone and enhancing CFTR channel activity when present in a cell expressing a mutant CFTR.

18. The CFTR polypeptide of claim 17 wherein said polypeptide comprises the nucleotide binding domain 1 and regulatory domain of the CFTR protein.

19. The polypeptide of claim 17 further comprising an internalizing peptide.

20. The peptide of claim 17 or 19 further comprising a secretion leader sequence.

21. The peptide of claim 17 wherein said peptide comprises a deletion of amino acid residue 408.

22. The peptide of claim 19 wherein the internalizing peptide is selected from the group consisting of SEQ ID NOS:1-20.

23. The peptide of claim 19 wherein the internalizing peptide is SEQ ID NO:2.

24. A method for enhancing mutant CFTR channel activity in a cell comprising contacting said cell with an inhibitor of molecular chaperone activity.

25. A method for enhancing mutant CFTR channel activity in a cell comprising contacting said cell with an inhibitor of molecular chaperone expression.

26. The method of claim 24 or 25 wherein said molecular chaperones are selected from the group consisting of Hdj2, or Hsc/Hsp70.